

We claim:

1. A purified polypeptide selected from the group consisting of:

a) a polypeptide comprising an amino acid sequence of SEQ ID NO:27;

b) a polypeptide comprising an amino acid sequence of SEQ ID NO:28;

5 c) a polypeptide comprising an amino acid sequence of SEQ ID NO:29;

d) a polypeptide comprising an amino acid sequence of SEQ ID NO:30;

e) a polypeptide comprising an amino acid sequence of SEQ ID NO:31;

f) a polypeptide comprising an amino acid sequence of SEQ ID NO:32;

g) a polypeptide comprising an amino acid sequence of SEQ ID NO:33;

10 h) a polypeptide comprising an amino acid sequence of SEQ ID NO:34;

i) a polypeptide comprising an amino acid sequence of SEQ ID NO:35;

j) a polypeptide comprising an amino acid sequence of SEQ ID NO:36;

k) a polypeptide comprising an amino acid sequence of SEQ ID NO:37;

l) a polypeptide comprising an amino acid sequence of SEQ ID NO:38; and

15 m) a fragment of the polypeptide of (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), or (l)

wherein the expression of the mRNA encoding such polypeptide is altered in a T84 model of gut barrier function.

2. A purified polypeptide comprising an amino acid sequence that is at least 80% identical  
20 to an amino acid sequence of claim 1.

3. An isolated DNA molecule encoding a purified polypeptide comprising an amino acid sequence that is at least 80% identical to an amino acid sequence of claim 1.

25 4. An isolated DNA molecule, wherein said isolated DNA molecule comprises a nucleotide sequence selected from the group consisting of:

a) SEQ ID NO:1;

b) SEQ ID NO:2;

c) SEQ ID NO:3;

- d) SEQ ID NO:4;  
e) SEQ ID NO:5;  
f) SEQ ID NO:6;  
g) SEQ ID NO:7;  
5 h) SEQ ID NO:8;  
i) SEQ ID NO:9; and  
j) SEQ ID NO:10 wherein the isolated DNA molecule has altered expression in a T84 model of gut barrier function.

10 5. An isolated DNA molecule, wherein said DNA molecule encodes a polypeptide comprising an amino acid sequence that is at least 80% identical to an amino acid sequence encoded by the DNA of claim 4.

15 6. An expression vector comprising the isolate DNA molecule according to claim 4.

7. A host cell transformed with the expression vector according to claim 5.

8. An isolated DNA molecule, wherein said isolated DNA molecule comprises a nucleotide sequence selected from the group consisting of: SEQ ID NO:1 - 26.

20 9. An isolated nucleic acid molecule comprising a polynucleotide having a nucleotide sequence at least 95% identical to a polynucleotide having a sequence selected from the group consisting of:

25 (a) a polynucleotide fragment of SEQ ID NO:1-26 or a polynucleotide which is hybridizable to SEQ ID NO:1-26;

(b) a polynucleotide encoding a polypeptide fragment of a translation of SEQ ID NO: 1-26 or a polypeptide fragment encoded by the cDNA sequence which is hybridizable to SEQ ID NO:1-26;

30 (c) a polynucleotide encoding a polypeptide epitope of a translation of SEQ ID NO: 1-26 or a polypeptide epitope encoded by a cDNA sequence which is hybridizable to SEQ ID NO:1-26;

(e) a polynucleotide encoding a polypeptide of a translation of SEQ ID NO: 1-26, having biological activity;

(f) a polynucleotide which is a variant of SEQ ID NO:1-26;

(g) a polynucleotide which is an allelic variant of SEQ ID NO:1-26;

5 (h) a polynucleotide which encodes a species homologue of a translation of SEQ ID NO: 1-26;

(i) a polynucleotide capable of hybridizing under stringent conditions to any one of the polynucleotides specified in (a)-(h), wherein said polynucleotide does not hybridize under stringent conditions to a nucleic acid molecule having a nucleotide sequence of only A  
10 residues or of only T residues.

10. The isolated nucleic acid molecule of claim 9, wherein the polynucleotide fragment comprises a nucleotide sequence encoding a secreted protein.

15 11. The isolated nucleic acid molecule of claim 9, wherein the polynucleotide fragment comprises a nucleotide sequence encoding a polypeptide chosen from the group consisting of:

(a) a polypeptide having the polypeptide sequence identified as a translation of SEQ ID NO: 1-26;

20 (b) a polypeptide having the polypeptide sequence of SEQ ID NO: 27-38; and

(c) a polypeptide encoded by the cDNA which is hybridizable to SEQ ID NO:1-26.

12. The isolated nucleic acid molecule of claim 9, wherein the polynucleotide fragment comprises the entire nucleotide sequence of SEQ ID NO:1-26 or the cDNA sequence which is  
25 hybridizable to SEQ ID NO:1-26.

13. The isolated nucleic acid molecule of claim 11 wherein the nucleotide sequence comprises sequential nucleotide deletions from sequence encoding either the C-terminus or the N-terminus.

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14. The isolated nucleic acid molecule of claim 10 wherein the nucleotide sequence comprises sequential nucleotide deletions from sequence encoding either the C-terminus or the N-terminus.

15. A recombinant vector comprising the isolated nucleic acid molecule of claim 9.
16. A method of making a recombinant host cell comprising the isolated nucleic acid molecule of claim 9.
- 5 17. A recombinant host cell produced by the method of claim 16.
18. An isolated polypeptide comprising an amino acid sequence at least 90% identical to a sequence selected from the group consisting of:
- 10 (a) a polypeptide fragment of a polypeptide encoded by a polynucleotide of SEQ ID NO: 1-26;
- (b) a polypeptide having the sequence of SEQ ID NO: 27-38;
- (c) a polypeptide domain of a polypeptide encoded by a polynucleotide of SEQ ID NO: 1-26;
- 15 (d) a polypeptide epitope of a polypeptide encoded by a polynucleotide of SEQ ID NO: 1-26;
- (e) a secreted form of a polypeptide encoded by a polynucleotide of SEQ ID NO: 1-26;
- (f) a full length protein of a polypeptide encoded by a polynucleotide of SEQ ID NO: 1-26;
- 20 (g) a variant of a polypeptide encoded by a polynucleotide of SEQ ID NO: 1-26;
- (h) an allelic variant of a polypeptide encoded by a polynucleotide of SEQ ID NO: 1-26;
- and
- (i) a species homologue of a polypeptide encoded by a polynucleotide of SEQ ID NO: 1-26.
- 25 19. The isolated polypeptide of claim 18, wherein the full length polypeptide comprises sequential amino acid deletions from the C-terminus.
20. The isolated polypeptide of claim 18, wherein the mature polypeptide comprises sequential amino acid deletions from the C-terminus.
- 30 21. The isolated polypeptide of claim 18, wherein the full length polypeptide comprises sequential amino acid deletions from the N-terminus.

22. The isolated polypeptide of claim 18, wherein the mature polypeptide comprises sequential amino acid deletions from the N-terminus.
23. An isolated antibody that binds specifically to the isolated polypeptide of claim 18.
24. A recombinant host cell that expresses the isolated polypeptide of claim 18.
25. A method of making an isolated polypeptide comprising:  
(a) culturing the recombinant host cell of claim 24 under conditions such that said polypeptide is expressed; and  
(b) recovering said polypeptide.
26. The polypeptide produced by the method of claim 25.
27. A method for preventing, treating, or ameliorating a medical condition, comprising administering to a mammalian subject a therapeutically effective amount of the polypeptide of claim 18 or the polynucleotide of claim 9.
28. The method of claim 25 wherein the medical condition is irritable bowel disease.
29. A method of diagnosing irritable bowel disease or a susceptibility to irritable bowel disease in a subject comprising:  
(a) determining the presence or absence of a polynucleotide of claim 9; and  
(b) diagnosing irritable bowel disease or a susceptibility to irritable bowel disease based on the presence or absence of said polynucleotide.
30. A method of diagnosing irritable bowel disease or a susceptibility to irritable bowel disease in a subject comprising:  
(a) determining the presence or amount of expression of the polypeptide of claim 18 in a biological sample; and  
(b) diagnosing irritable bowel disease or a susceptibility to irritable bowel disease based on the presence or amount of expression of the polypeptide.
31. A method for identifying a binding partner to the polypeptide of claim 18 comprising:

- (a) contacting the polypeptide of claim 18 with a binding partner; and
- (b) determining whether the binding partner affects an activity of the polypeptide.

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32. A method of identifying an activity in a biological assay, wherein the method comprises:

- (a) expressing the polynucleotide of SEQ ID NO:1-26 in a cell;
- (b) isolating the supernatant;
- (c) detecting an activity in a biological assay; and
- 10 (d) identifying the polypeptide in the supernatant having the activity.